ones that are paralyzed on the opposite side. 2. Perfect preservation of the voluntary movements, and of the muscular sense. 3. A zone of exalted sensibility of small extent, and feeble in degree, situated in the parts above those the sensibility of which is diminished.

In animals M. Brown-Séquard has also observed occasionally amaurosis, ulceration of cornea, hypertrophy of supra-renal capsule, epileptic convulsions, and general augmentation of the vital properties of both the muscles and nerves in the hyperæstheticized parts.

From these observations he considers himself justified in drawing the conclusion, that there is an absolutely complete decussation of the conductors of the various kinds of susceptibility, with the exception only of those conveying the muscular sense. Further clinical facts appear to demonstrate—1. That each of the four species of sensibility referred to above, possesses its own proper conductors which are distinct from those of the other kinds. 2. That each of these species of conductors occupies a distinct part of the spinal cord; and, lastly, that at the upper part of the cervical portion of the spinal cord the four species of conductors coming from the abdominal members and a great part of the trunk, form a group placed behind a similar group constituted by those proceeding from the thoracic members. For numerous cases, and much ingenious reasoning in support of these propositions, the reader is referred to the paper itself, which will well repay perusal.—*Ibid.*, from *Journal Physiol.*, Oct. 1863.

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3. *Relation existing between the Sense of Temperature, the Sense of Touch, and the Sense of Pain.*—The following interesting case of Dr. A. F. SPRING is almost unique, and affords a strong confirmation of the opinions of those who think the sensations of temperature, pain, and pressure are conveyed through separate channels, or are perceived by separate centres. The patient was a female, aged sixty, who had long suffered from hypertrophy of the heart, dyspnœa, and persistent bronchitis. From exposure to cold she became paralyzed, though without loss of consciousness or deviation of the tongue when that organ was protruded. The entire right half of the body, including the head, became insensible to temperature, and to pain, but there was no loss of motor power; the muscular power, in fact, as measured by the dynamometer, being somewhat increased on the affected side. She could feel the slightest touch on the anæsthesiated (?) side, and, when the eyes were closed, she could discover and pick up a pin from the floor. On washing the hands she could distinctly perceive the shock and movement of the water flowing over them, but was quite unable to distinguish whether it was hot or cold. In winter she could only perceive the temperature with the left half of the body, and the same when standing near a fire. The normal temperature of the skin on the affected side was maintained in every part, or differed only to the extent of 1° or 2°. Neither the pricks of needles nor strong pinching was perceived in the slightest degree. She suffered from neuralgia in the temporal region at night. In consultation with M. Schwann, the author ascertained that there was no diminution in the acuteness of the patient's perception in regard to impressions of weight and of contact. The hand lying prone on a table, and weighted with 500 grammes, readily distinguished the addition or removal of two or three grammes, and when weights were concealed in a cloth, and the amount estimated alternately by the two arms, no difference was remarked. From experiments made in the method suggested by Weber for determining the delicacy of touch by applying the points of compasses, it appeared that there was a considerable diminution of acuteness on the left, or healthy side, but a still more marked diminution on the right side. On the eighth day after this consultation the sensibility to pain returned, under the form of a painful formication, and from this time every object appeared *hot* to the patient, so that she was unable to distinguish ice from water at a temperature of 122°. This state lasted two months, when death occurred from an attack of apoplexy.

In this case the sense of variation of temperature, instead of being associated with tactile sensations, followed the same course as the sensations of pain, disappearing and reappearing, though modified with the latter. The muscular sense was intact, and the sense of touch was only deteriorated in regard to its perception of distance. The cause of these abnormal conditions was evidently seated in the nervous centres.—*Ibid.*, from *Presse Médicale*, 1864, No. 34.

MATERIA MEDICA AND PHARMACY.

4. *Local Anæsthesia in a Case of Cæsarean Section, Ovariotomy, &c.*—Dr. B. W. Richardson relates (*Med. Times and Gaz.*, April 7, 1866) a case of Cæsarean section performed by Dr. Greenhalgh in which local anæsthesia was employed by Dr. R.'s method.

In this case Dr. R. states "local anæsthesia by the ether spray process offered everything that could be desired, and I think was in every sense preferable to general anæsthesia from chloroform or ether. Indeed, Dr. Greenhalgh's foresight in respect to these advantages is not less conspicuous than the skill and precision with which he performed the operation. I say this, not in any way to disparage chloroform in cases where it is really demanded, but as a matter of fact and experience. The advantages of the local method were these:—

"1. The operation was painless: the pain that was felt was the pain of labour, and that in the lightest and shortest degree.

"2. The patient, prior to operation, was disposed to vomit. Under chloroform she would almost certainly have vomited during the operation; the intestines would thus have been brought into the wound, and the operation would have been prolonged and made more serious. There might also have been after-vomiting. The tendency of the local anæsthesia was to check vomiting.

"3. The action of the cold checked hemorrhage. I do not think three ounces of blood were lost.

"4. The action of the cold in producing uterine contraction was in every sense beneficial.

"5. The patient was not subjected to shock. I have often, even in deep sleep from chloroform, seen symptoms of shock as the knife entered the flesh, and have felt the heart stop as sharply as though a blow had been inflicted on it. By the local anæsthesia the patient, in her full natural power, was subjected to no kind of cardiac embarrassment.

"6. The consciousness of the patient was an advantage to the operator. She never was restless, she never moved her body for a moment, and when she was once asked not to bear down with the diaphragm, she obeyed immediately.

"7. During the operation there was not the remotest anxiety that the patient would die from anæsthesia."

This process has also proved successful in ovariotomy. Mr. Spencer Wells operated on a woman who had an ovarian tumour so large that the heart and liver were pushed up to a level with the nipples, and the uterus (with the inverted vagina and part of bladder and rectum) down between her thighs. Thinking that chloroform might be dangerous in this state of heart and lungs, Mr. Wells rendered the integument insensible by the ether spray before making his first incision. Not the slightest pain was felt. A very large cyst was tapped and emptied. Some extensive adhesions then required to be separated, and a little chloroform was given, the operation being completed under its influence. If there had been no adhesion, the local anæsthesia would have been quite sufficient to render this great operation painless.

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5. *Local Anæsthesia.*—Dr. L. W. Sedgwick, who has witnessed most of Dr. Richardson's experiments with his new mode of producing local anæsthesia (see last number of this Journal, p. 512) gives (*Lancet*, April 14, 1866), the following comments:—

"When the spray is directed to any part at the proper distance, an inch and a half, much cold is felt, and, at the period of blanching, some prickling, which in some sensitive persons amounts even to a sharp pain. The more rapidly